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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/518,419   | 12/17/2004  | Gun Sik Cho          | 4240-118            | 6772             |
| 7590   | 01/11/2007  |                      | EXAMINER            |                  |
| Steven J Hultquist<br>Intellectual Property Technology Law<br>PO Box 14329<br>Research Triangle Park, NC 27709 |             |                      | HENRY, MICHAEL C    |                  |
|  |             |                      | ART UNIT            | PAPER NUMBER     |
|  |             |                      | 1623                |                  |

| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE  | DELIVERY MODE |
|--|------------|---------------|
| 3 MONTHS                               | 01/11/2007 | PAPER         |

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

|                              |                        |                     |  |
|------------------------------|------------------------|---------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b> | <b>Applicant(s)</b> |  |
|                              | 10/518,419             | CHO ET AL.          |  |
|                              | <b>Examiner</b>        | <b>Art Unit</b>     |  |
|                              | Michael C. Henry       | 1623                |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-7 is/are pending in the application.
  - 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-7 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____.                                     |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>12/17/04</u> .  | 6) <input type="checkbox"/> Other: _____.                         |

## **DETAILED ACTION**

Claims 1-7 are pending in application

### ***Claim Objections***

Claim 7 is objected to because of the following informalities: The claim recites the phrase "claims 1~6" which appears to be a typographical error. It appears that the phrase "claims 1~6" should be replaced by the phrase "claims 1-6". Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The terms "chitosan derivative" and "its derivative", in claims 1, 3 and 7, renders the claims indefinite. More specifically, in the absence of the specific derivatizations to the chemical core claimed (CCC) or distinct language to describe the structural modifications or the chemical names of the derivatized (CCC) of this invention, the identity of said derivative(s) would be difficult to describe and the metes and bounds of said derivative(s) that applicant regard as the invention cannot be sufficiently determined because they have not been particularly pointed out or distinctly articulated in the claims. Therefore, the identity of this composition component is indefinite. The symbol "~" in claims 3, 6 and 7 renders the claims indefinite since it is unclear whether the symbol represents an approximation or a range between two numerical values.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cho et al. (KR 2001000706 A).

In claim 1, applicant claims a method for producing a chitosan-containing salt having the function of lowering blood pressure, which comprises the steps of: (a) dissolving an acid-soluble chitosan in organic acid, or dissolving a water-soluble chitosan derivative in water, to prepare a chitosan solution; (b) spraying the chitosan solution on salt particles to bind the chitosan to the salt particles; and (c) drying the chitosan-bound salt particles. Claims 2-6 are drawn to a method of claims 1 wherein the chitosan is  $\alpha$ -chitosan or  $\beta$ -chitosan, wherein the chitosan or derivative is of specific molecular weight, wherein the organic acid is a specific organic acid, wherein the salt is specific salt or of specific mesh size. Claim 7 is drawn to said method wherein the chitosan or derivative is of specific %.

Cho et al. disclose a method for producing a chitosan-containing salt having the function of decreasing (lowering) blood pressure and antibiosis, which comprises dissolving soluble chitosan in organic acid or water, to prepare a chitosan solution; mixing the chitosan solution with salt to make the chitosan adhere (bind) to the salt; and drying the chitosan salt solution to produce a said chitosan-containing salt (salt having the chitosan) (see abstract). Furthermore, Cho et al. disclose that the preferred molecular weight of the chitosan for adhesive capacity with

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the salt is 1,000-1,000,000 (see abstract). In addition, Cho et al. disclose that content of the chitosan in their composition (chitosan-containing salt) is 0.05-10%, and particularly 0.5-5% (see abstract).

The difference between applicant's claimed method and the method of Cho et al. is that, sprays their chitosan solution onto the salt whereas Cho et al. mixes chitosan with the salt. However, it is obvious to use any means or common technique to react or interact said chitosan and salt especially since said common means or technique does not alter the chitosan-containing salt composition formed.

It would have been obvious to one having ordinary skill in the art, at the time the claimed invention was made to have used the method of Cho et al. to prepare a chitosan-containing salt (a salt having chitosan) for lowering blood pressure and for and antibiosis, and to use any common means or common technique to react or interact said chitosan with said salt especially since said means or technique does not alter the chitosan-containing salt composition formed.

One having ordinary skill in the art would have been motivated, to use the method of Cho et al. to prepare a chitosan-containing salt (a salt having chitosan) for lowering blood pressure and for and antibiosis, and to use any common means or common technique to react or interact said chitosan and salt, based on factors such as availability and/or need, and especially since said means or technique does not alter the chitosan-containing salt composition formed.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael C. Henry whose telephone number is 571-272-0652. The examiner can normally be reached on 8.30am-5pm; Mon-Fri. If attempts to reach the

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examiner by telephone are unsuccessful, the examiner's supervisor, Shaojia A. Jiang can be reached on 571-272-0627. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Michael C. Henry

 1/5/07  
Shaojia Anna Jiang, Ph.D.  
Supervisory Patent Examiner  
Art Unit 1623

January 4, 2007.